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Bozeman, Montana

MONTANA WATER SUPPLY OUTLOOK

Snowpack and Streamflow Forecasts as of May 1, 1984

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
SNOW SURVEY UNIT
Federal Bldg., Rm. 443
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Bozeman, MT 59715

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Snowpack improves in some areas

Heavy snowfall near the end of April, centered around Red Lodge in south-central Montana, dropped an estimated 7 feet of snow in 5 days and improved snowpacks in this area.

Through April, southern drainages continued to pick up snow while the northern areas ended up short again.

Snowpacks in southwest, central and south-central Montana have average or above average levels of water stored in the snowpack. All other areas have below to well below average amounts.

High elevation snowpacks continued to build through April while lower elevations are generally showing some melt.

Statewide stream-flow forecasts vary

Below average to well below average runoff is forecast for the northwestern one-third of the state and most of the Yellowstone River drainage above the Bighorn.

Missouri River headwater streams and streams draining the front face of the Beartooth Range are expected to have average to above average streamflow during the spring and summer months. Shortages of irrigation water supplies can be expected in many areas.

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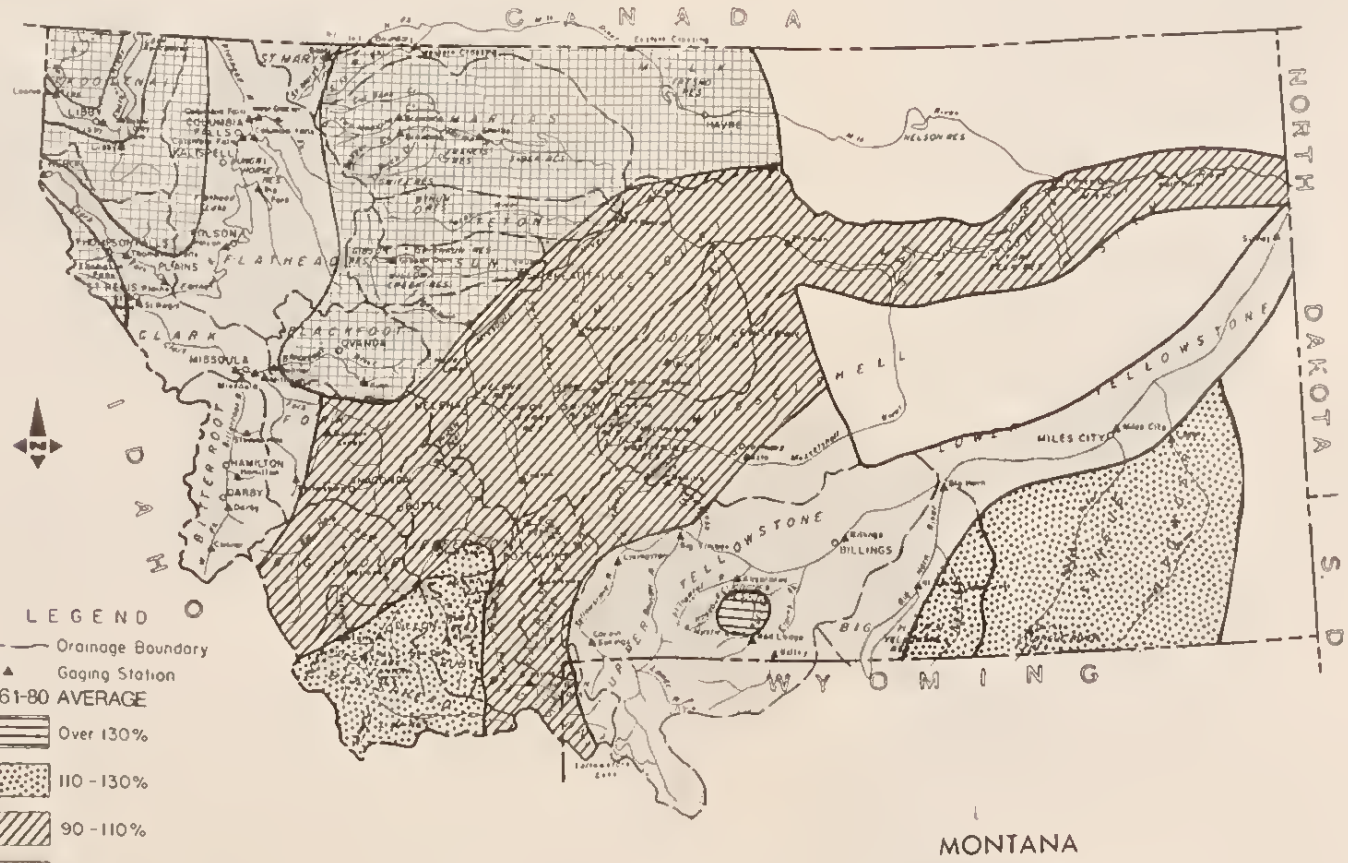
The Montana Water Supply Outlook is a publication of the U.S. Soil Conservation Service. The SCS administers the Cooperative Snow Survey Program in cooperation with other federal, state and private agencies, organizations, and individuals.

The report is prepared by SCS, Snow Survey and Water Supply Forecast Staff, Room 443, Federal Building, 10 East Babcock, Bozeman, Montana.

FEDERAL STATE PRIVATE
COOPERATIVE SNOW SURVEYS
Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro electric power generation, navigation, mining and industry
The Cooperation of Water Users with the Snow Survey



Missouri River & Hudson Bay Drainages

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average
PERIOD	May - September				May - July			
RED ROCK RIVER near Monida (1)	93.1	115	157	80.7	85.0	116	130	73.5
BEAVERHEAD RIVER near Grant (2)	150	125	206	120	126	127	154	99.0
BEAVERHEAD RIVER at Barratts (2)	198	122		162	165	123		134
RUBY RIVER near Alder	106	116		91.6	88.0	117		74.9
BIG HOLE RIVER near Melrose	620	92		674	560	91		614
BOULDER RIVER near Boulder	STREAMFLOW MEASUREMENTS DISCONTINUED							
WILLOW CREEK near Harrison	20.4	117		17.5	18.0	118		15.3
MADISON RIVER near Grayling (3)	402	91	479	440	300	90	355	332
MADISON RIVER near McAllister (4)	775	104	864	743	590	104	665	568
GALLATIN RIVER near Gateway	520	101	509	514	442	102	426	433
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (5)	27.9	109	25.1	25.6	24.4	108	21.3	22.6
HYALITE CREEK near Bozeman (6)	45.5	108		42.0	38.8	108		35.9
GALLATIN RIVER at Logan	555	103		541	462	102		452
MISSOURI RIVER at Toston (7)	2250	102	2849	2,200	1900	103	2049	1,849
SHEEP CREEK near White Sulphur Springs	18.4	91	15.5	20.2	15.7	90	11.8	17.4
SUN RIVER at Gibson Dam (8)	325	60	329	538	285	58	284	489
BELT CREEK near Monarch	118	94		126	105	92		114
MISSOURI RIVER at Fort Benton (9)	3370	98		3,440	2870	98		2,928
TWO MEDICINE CREEK near Browning (10)	150	68		222	140	67		210
BADGER CREEK near Browning	83.0	69		120	69.0	67		103
INFLOW SWIFT RESERVOIR near Dupuyer	55.8	70	47.7	79.7	46.0	68	38.0	67.7
CUT BANK CREEK at Cut Bank	70.0	67		104	64.0	65		98.0
MARIAS RIVER near Shelby	295	62	215	473	270	60	200	449
MISSOURI RIVER at Virgelle (11)	3722	94		3,960	3210	94		3,418
MISSOURI RIVER near Landusky (11)	4052	94		4,303	3485	94		3,707
NORTH FORK MUSSELSHELL RIVER near Delpine	4.8	91		5.3	3.8	88		4.3
SOUTH FORK MUSSELSHELL RIVER above Martinsdale	48.6	86		56.5	45.0	85		52.7
MISSOURI RIVER below Fort Peck Dam (11)	4052	95		4,244	3520	95		3,711
MILK RIVER at Eastern Crossing	177	84		199				
MILK RIVER at Eastern Crossing (12)	21.5	39		55.4				
INFLOW LAKE SAKAKAWEA, ND (11)	9660	89		10,855	8650	89		9,708
SASKATCHEWAN RIVER BASIN								
SWIFTCURRENT CREEK at Sherburne (13)	89.5	74	93.6	121	75.0	72	81.2	104
ST. MARY'S RIVER near Babb (13)	340	73		465	285	72		394

(1) Adjusted for storage in Lima Reservoir.
(2) Adjusted for storage in Lima and Clark Canyon Reservoirs.
(3) Adjusted for storage in Hebgen Lake.
(4) Adjusted for storage in Hebgen Lake and Ennis Lake.
(5) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above the Reservoir.
(6) Adjusted for storage in Middle Creek Reservoir.
(7) Adjusted for storage in Lima, Hebgen, Ennis & Clark Canyon Reservoirs.
(8) Adjusted for storage in Gibson Reservoir & diversions.
(9) Adjusted for storage in Lima, Clark Canyon, Hebgen, Ennis, Gibson, Pishkun, Willow Creek & Canyon Ferry Reservoirs.
(10) Adjusted for storage in Two Medicine Reservoir & diversions in Two Medicine Canal.
(11) Adjusted for all upstream reservoirs.
(12) Flow at Eastern Crossing minus St. Mary's Canal.
(13) Adjusted for storage in Lake Sherburne.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

PEAK FLOWS (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range	Average
Big Hole River near Melrose	6,500 - 8,000	8,020
Ruby River above Reservoir	900 - 1,200	939
Gallatin River near Gateway	5,500 - 6,500	5,432
Gallatin River near Logan	5,500 - 7,000	5,488
Missouri River at Toston	18,000 - 22,000	18,582
Belt Creek near Monarch	1,200 - 2,000	1,854
Marias River near Shelby	3,000 - 5,000	13,312
S. Fk. Musselshell above Martinsdale	750 - 1,000	745

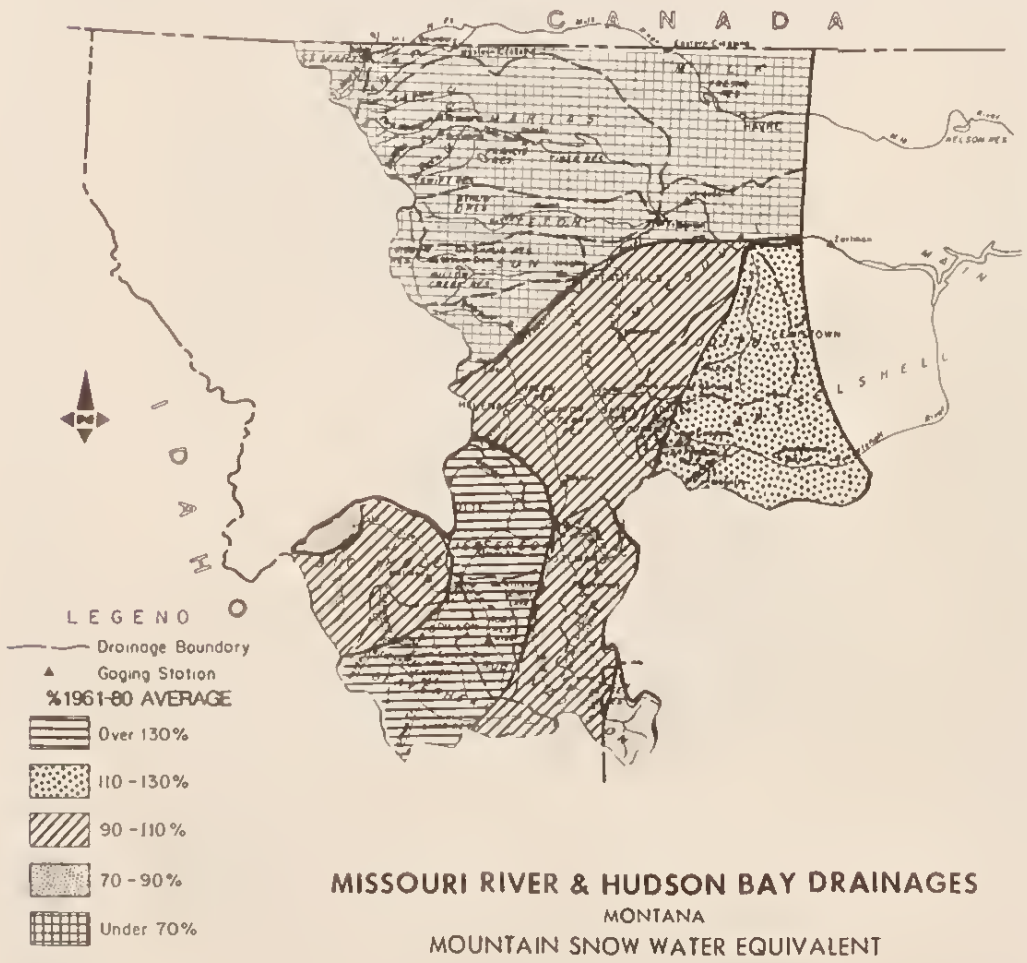
*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range

Average based on 1961-80 period.

WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Flow Period: Late Season
Beaverhead	Exc	Avg
Ruby	Exc	Avg
Big Hole	Fair	Fair
Boulder	Fair	Fair
Jefferson	Avg	Fair
Madison	Avg	Avg
Gallatin	Avg	Avg
West-Side Missouri	Avg	Avg
Smith-Belt	Avg	Fair
Sun	Poor	Poor
Teton	Poor	Poor
Marias	Poor	Poor
Judith	Fair	Fair
Musselshell	Fair	Fair
Milk	Poor	Poor
Bear Paws	Fair	Fair
St. Mary's	Fair	Poor



MISSOURI RIVER & HUDSON BAY DRAINAGES
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

Some streams near average

The headwaters of the Missouri River should have near to above average spring and summer runoff. Streams draining in the central mountain ranges are forecast to have a little below average runoff. Well below average runoff is expected from streams originating along the Continental Divide north of Stemple Pass, west of Helena.

Irrigation water will be in short supply on all streams in the Sun, Teton, Marias and Milk River drainages where stored water is not available. Other areas should have near average supplies.

Based on snow pillow records and current conditions, the Big Hole River is expected to reach its peak snowmelt runoff in early June with a little below average peak flow. The peak inflow to Hebgen Lake on the Madison is expected near the end of May or early June at a little less than average amount. The Gallatin River is forecast to peak a little higher than average around mid-June.

These headwater streams will all combine for a near average to slightly above average peak inflow to Canyon Ferry Reservoir the first or second week in June.

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF: Last Year	Average
Beaverhead	28	100	112
Ruby	13	110	121
Big Hole	27	100	99
Boulder	11	117	106
Jefferson	79	103	108
Madison	33	97	100
Gallatin	23	111	99
Missouri Headwater	135	103	104
West-side Missouri (Toston-Cacade)	11	114	92
Smith-Belt-Arrow	11	114	90
Missouri Main-stem	22	114	91
Teton & Sun	12	78	46
Marias	5	98	65
Marias-Teton-Sun	17	88	55
Judith-Musselshell	17	156	102
Milk	10	58	42
Bear Paws	7	0	0
Missouri (Total)	191	106	98
Saskatchewan			
St. Mary's	10	74	57
Bow River in Alberta	4	70	67

Missouri snowpack near average

The southwestern part of the Missouri drainage continues to receive good mountain snowfall. Accumulated snowpack in the headwaters area is generally average or above average.

Some slight improvement has been noted in the Sun, Marias, Teton and Dearborn headwaters but the water stored in the snowpack is still only about one-half of average levels. Small mountain ranges in the central part of the state continue to show near average snowpacks.

The major storm of April 24-28 that seemed to be centered in the Red Lodge area did deposit considerable snow in the Tobacco Root and Bridger Ranges and the north end of the Gallatin Range south of Bozeman. These areas received 2 to 3 feet of new snow during the storm. The area along the Continental Divide between Butte and Helena also received considerable snow during April.

Snowpacks are still accumulating at most of the higher elevations. Some melt did occur around mid-April but was replaced with new snowfall. Snowpacks in lower elevations have melted or are melting slowly.

Yellowstone River Drainage

STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average
PERIOD	May - September				May - July			
YELLOWSTONE RIVER at Corwin Springs	1575	81	1656	1,944	1280	80	1328	1,602
YELLOWSTONE RIVER near Livingston	1820	80		2,269	1480	80		1,860
BOULDER RIVER at Big Timber	285	74		385	255	72		353
STILLWATER near Absarokee (1)	545	90		606	460	92		502
CLARKS FORK RIVER near Belfry	480	79		606	420	78		541
ROCK CREEK near Red Lodge	STREAMFLOW MEASUREMENTS DISCONTINUED BY USGS							
INFLOW COONEY RESERVOIR near Boyd (2)	69.0	134		51.5	56.0	138		40.5
YELLOWSTONE RIVER at Billings	3422	81	3582	4,255	2930	82	2923	3,571
BIGHORN RIVER near St. Xavier (3)	1442	79	1927	1,833	1320	80	1716	1,651
LITTLE BIGHORN RIVER near Hardin	180	115		157	158	115		137
TONGUE RIVER near Decker	280	115		244	250	115		218
YELLOWSTONE RIVER at Miles City (4)	5037	80		6,273	4350	81		5,391
POWDER RIVER at Moorhead	327	118		233	300	119		212
YELLOWSTONE RIVER near Sidney (5)	5661	82		6,921	4920	83		5,947

(1) Adjusted for storage in Mystic Lake.
(2) Adjusted for storage in Cooney Reservoir.
(3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake, Pilot Butte and Bighorn Reservoirs.
(4) Adjusted for storage in Bull Lake, Buffalo Bill, Boyseo, Pilot Butte, Bighorn and Tongue River Reservoirs.
(5) Adjusted for reservoirs shown in (4) and diversions into the Lower Yellowstone Canal.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

Runoff variable in Yellowstone drainage

Red Lodge Creek, Willow Creek and other streams draining the front face of the Beartooth are expected to produce above average runoff from the heavy snows recently deposited on top of earlier season accumulations.

The Yellowstone, Boulder, Stillwater and Clark's Fork Rivers are still forecast to have spring and summer runoff 10 to 20 percent less than average. Streams flowing out of the Crazy, Pryor and Bighorn Mountains should have average to a little above average runoff.

Some late season irrigation water shortages can be expected on most streams in the area above the Bighorn River.

Current weather conditions and the amount of snowpack on snow pillows indicate the Yellowstone River and most of its tributaries will reach their peak snowmelt runoff around mid-June at levels near to a little below average.

PEAK FLOWS (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range	PEAK FLOW (SECOND FEET) Average
Yellowstone River at Corwin Springs	13,000 - 16,000	18,790
Yellowstone River at Livingston	16,000 - 19,000	21,140
Boulder River near Big Timber	3,700 - 4,500	5,332
Stillwater River near Absarokee	5,000 - 7,000	6,644
Clarks Fork River near Belfry	5,500 - 7,000	7,611
Yellowstone River at Billings	35,000 - 45,000	43,365

*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range.

Average based on 1961-80 period.

Major storm hits Red Lodge area

Between April 24-28, a major snowstorm struck the east slope of the Beartooth Range and moved eastward along the Montana-Wyoming border.

The butyl snow pillow at the Cole Creek SNOTEL site at 7,850 feet, west of Red Lodge, measured an increase of 8.5 inches of snow water equivalent during this storm. This equates to about a 7-foot snowfall over the 5-day period. Other SNOTEL sites also indicated the storm intensity. Silver Run pillow (6,630 feet) also near Red Lodge, measured 4.9 inches of snow water equivalent during the same period.

The area around Red Lodge seemed to be near the center of the heavy snows. Deep snow also fell along the front face of the Beartooth Range with Placer Basin (8,830 feet) near the Stillwater-Boulder Divide recording an increase of 4.1 inches of water equivalent. Bald Mountain (9,380 feet) on the north end of the Bighorn Mountains recorded 3.5 inches and Burgess Junction (7,880 feet) reported a 5.2 inch increase.

The heavy snow did not extend back into the mountains. Beartooth Lake (9,275 feet) on the Beartooth Highway received only 1.8 inches, while Fisher Creek (9,100 feet) and White Mill (8,700 feet) near Cooke City showed inchreases of only 1.1 inches and 1.3 inches respectively.

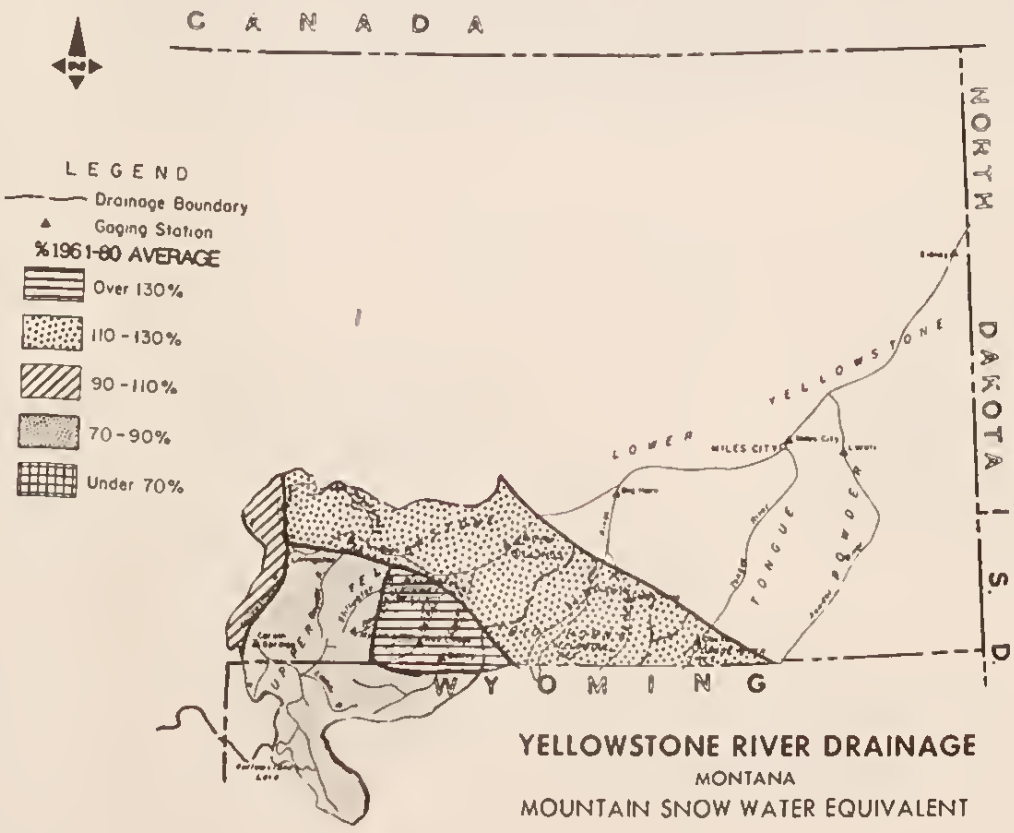
The present snowpack is still below average in the headwaters of the Yellowstone and Boulder Rivers but near average elsewhere.

SUMMARY of SNOW MEASUREMENTS
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF Last Year	THIS YEAR'S SNOW WATER AS PERCENT OF Average
Upper Yellowstone ab Livingston	18	101	80
Shields	10	139	104
Boulder & Stillwater	9	102	81
Rock Creek & Clark's Fork	17	106	95
Yellowstone (ab Bighorn River)	54	109	89
Bighorn/Wyoming	29	108	100
Little Bighorn	1	142	116
Bighorn (Total)	30	110	101
Tongue	2	126	103
Powder	3	155	102
Yellowstone (Total)	89	111	93

WATER SUPPLY OUTLOOK Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period Spring Season	Flow Period Late Season
Yellowstone at Livingston	Fair	Poor
Shields	Avg	Avg
Boulder	Fair	Poor
Sweetgrass - Big Timber	Avg	Avg
Stillwater	Avg	Fair
Rock Creek	Fair	Fair
Clark's Fork	Fair	Poor
Yellowstone above Bighorn	Fair	Fair
Bighorn	Avg	Avg
Little Bighorn	Avg	Fair
Tongue	Avg	Fair
Powder	Avg	Fair
Lower Yellowstone	Fair	Fair



YELLOWSTONE RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

SNOW SURVEY DATA

SNOW — May 1, 1984

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (inches)	THIS YEAR: Water Content (inches)	PAST RECORD: Water Content (inches): Last Year	PAST RECORD: Water Content (inches): Average
ABUNDANCE LAKE	8800	4/29	66	22.5	23.9	24.4
AMBROSE	6480	4/24	42	15.0	10.4	13.7
ARCH FALLS	7350	4/28	56	15.4	11.7	15.7
ASHLEY DIVIDE	4820	4/27	0	.0		2.9
ASHLEY LAKE	4000	4/27	0	.0		3.0
BADGER PASS	6900	4/28	82	29.8	29.2	44.2
BADGER PASS PILLOW	6900	5/01	SP	26.5	26.4	38.0
BALD EAGLE PEAK	5700	4/25	100	43.7	58.9	63.6
BALD RIDGE	7500	5/01	45	16.0	9.4	13.9
BANFIELD MOUNTAIN	5600	4/25	24	8.3	23.8	23.2
BANFIELD MOUNTAIN PILLOW	5600	5/01	SP	9.0	20.7	17.5
BAREE CREEK	5500	4/26	67	29.3	43.7	47.2
BAREE MIDWAY	4600	4/26	37	14.6	28.9	33.2
BAREE TRAIL	3800	4/26	0	.0	.0	1.6
BARKER LAKES PILLOW	8250	5/01	SP	18.1	19.6	17.1
BASIN CREEK	7180	4/26	43	12.0	11.3	9.8
BASIN CREEK PILLOW	7180	5/01	SP	12.2	11.0	9.6
BASSOO PEAK	5150	5/01	0	.0	.5	6.9
BEAGLE SPRINGS	8850	4/28	44	13.2	11.5	8.0
BEAGLE SPRINGS PILLOW	8850	5/01	SP	13.0	9.7	8.3
BEAR BASIN	8150	4/30	71	25.4	21.5	24.2
BEAR PAW SKI AREA	5200	4/30	0	.0	2.6	5.4
BEAVER LAKE	5900	4/28	43	13.8	14.3	26.0
BIG CREEK	6750	4/28	102	43.2	49.8	52.0
BIG SKY	7700	4/30	54	18.4	16.4	18.1
BIG SKY MEADOW	6350	4/30	14	5.2	6.6	4.6
BIG SNOWY	7150	4/25	70	29.2	14.9	26.4
BLACK BEAR	7950	5/01	98	40.4	48.5	44.8
BLACK BEAR PILLOW	7950	5/01	SP	36.9	39.2	38.8
BLACK MOUNTAIN	7750	5/01	66	22.6	17.2	17.4
BLACK PINE	7100	4/25	33	10.4	10.2	14.9
BLACK PINE PILLOW	7100	5/01	SP	13.3	10.8	15.6
BLOODY DICK	7600	4/26	45	13.0	13.4	14.1
BLOODY DICK PILLOW	7550	5/01	SP	12.8	12.2	9.1
BLUE LAKE	5900	4/28	45	16.0	17.0	25.3
BOTS SOTS	7750	5/01	58	14.6	10.2	10.2
BOULDER MOUNTAIN	7950	4/25	65	23.6	21.2	22.9
BOULDER MOUNTAIN PILLOW	7950	5/01	SP	24.2	24.0	23.2
BOX CANYON	6670	4/29	25	6.6	6.2	8.3
BOX CANYON PILLOW	6700	5/01	SP	4.0	4.4	6.0
BOXELDER CREEK	5100	4/30	0	.0	1.8	3.4
BRANHAM LAKES	8850	4/30	116	42.6	38.5	35.7
BRIDGER BOWL	7250	4/30	75	30.4	24.0	32.6
BRIDGER BOWL PILLOW	7250	4/30	SP	30.0	23.6	30.3
BRISTOW CREEK	3900	4/25	0	.0	0.0	1.7
BRUSH CREEK TIMBER	5000	4/27	4	1.5	6.6	7.7
BULL MOUNTAIN	6600	5/03	17	5.3	3.2	3.7
CABIN CREEK	5200	4/26	3	.3	.4	2.3
CALL ROAD	8050	4/28	52	16.2	14.2	14.2
CALVERT CREEK	6430	4/25	23	7.6	10.0	10.1
CALVERT CREEK PILLOW	6430	5/01	SP	1.7	5.2	2.8

SNOW — May 1, 1984

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (inches)	THIS YEAR: Water Content (inches)	PAST RECORD: Water Content (inches): Last Year	PAST RECORD: Water Content (inches): Average
FRIDAY HILL	4620	4/25	20	6.7	17.8	11.1
FROHNER MEADOWS	6480	4/27	32	7.6	5.4	6.5
FROHNER MEADOWS PILLOW	6480	5/01	SP	9.1	8.0	7.6
GARVER CREEK	4250	4/25	0	.0	5.4	5.2
GARVER CREEK PILLOW	4250	5/01	SP	.0	6.5	4.3
GIBBONS PASS	7100	4/26	65	24.7	25.0	24.0
GOAT MOUNTAIN	7000	4/27	10	2.4	4.4	10.3
GOLD STONE	8100	4/26	58	17.6	18.4	19.6
GRASSHOPPER	7000	4/30	13	5.1	4.0	5.6
GRAVE CREEK	4300	4/25	14	5.3	14.1	15.1
GRAVE CREEK PILLOW	4300	5/01	SP	3.2	11.8	8.1
GRIFFIN CREEK DIVIDE	5150	5/01	9	3.5	6.1	7.9
GUNSIGHT LAKE	6300	4/28	77	32.4	33.0	43.9
HAND CREEK	5030	4/30	21	6.8	11.0	9.4
HAND CREEK PILLOW	5030	5/01	SP	7.0	10.2	9.3
HAWKINS LAKE	6450	4/25	54	20.6	34.1	35.4
HAWKINS LAKE PILLOW	6450	5/01	SP	19.0	31.4	33.1
HEART LAKE TRAIL	4800	4/29	27	11.3	9.0	18.4
HEBGEN DAM	6550	4/30	33	10.8	12.2	7.6
HELL ROARING DIVIDE	5770	5/01	59	24.9	29.6	32.4
HERRIG JUNCTION	4850	4/26	38	14.7	25.3	22.3
HOLBROOK	4530	4/24	0	.0	0.0	2.2
HOOD MEADOW	6600	4/28	43	11.6	7.8	12.3
HOODOO BASIN	6050	4/29	98	42.8	45.7	54.5
HOODOO BASIN PILLOW	6050	5/01	SP	36.7	40.5	47.8
HOODOO CREEK	5900	4/29	89	39.4	41.4	50.7
ICEBERG LAKE #3	5600	4/25	44	16.6	21.1	32.9
INDEPENDENCE	7850	4/29	46	13.4	13.8	19.3
INTERGAARD	6450	4/30	29	9.4	5.2	8.4
JAHNKE LAKE TRAIL	7200	4/26	32	8.6	9.6	9.2
JOHNSON PARK	6450	4/30	4	.9	0.0	3.1
JOSEPHINE LOWER #9	4900	4/26	25	7.7	10.9	17.7
KEELER CREEK	3300	4/25	0	.0	0.0	1.5
KINGS HILL	7500	4/26	46	15.0	9.6	16.7
KIWANIS CAMP	3720	4/30	0	.0		0.5
KRAFT CREEK PILLOW	4750	5/01	SP	1.2	.6	7.4
LAKE CREEK	6100	4/28	21	6.4	5.7	3.8
LAKEVIEW CANYON	6930	4/26	34	9.6	19.4	12.6
LAKEVIEW RIDGE	7400	4/26	31	9.2	17.3	10.5
LAKEVIEW RIDGE PILLOW	7400	5/01	SP	12.8	19.9	8.9
LEMHI PASS	7480	4/28	40	13.2	5.0	7.4
LEMHI RIDGE	8100	4/28	47	15.5	8.6	10.6
LEMHI RIDGE PILLOW	8100	5/01	SP	15.5	9.6	10.6
LICK CREEK	6860	4/27	60	12.6	9.4	10.8
LICK CREEK PILLOW	6860	5/01	SP	12.4	8.4	8.3
LITTLE PARK	7400	4/30	55	18.6	15.8	18.4
LOGAN CREEK	4300	4/27	0	.0	1.0	2.7
LONE MOUNTAIN	8880	4/30	72	29.0	26.1	27.0
LOST HORSE	5940	4/27	72	29.6	26.8	34.9
LOST SOUL	4800	4/25	0	.0	10.7	8.9
LOWER TWIN	7900	5/01	94	30.6	27.6	25.6
LOWER TWIN PILLOW	7900	5/01	SP	27.7	26.2	23.8
LUBRECHT FLUME	4680	5/01	0	.0	.0	0.2
LUBRECHT FLUME PILLOW	4680	5/01	SP	.0	.0	0.6

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CAMP MISERY	6400	4/24	127	58.0	55.2	53.7
CAMP SENIA	7890	5/01	51	12.7	8.6	10.0
CARROT BASIN	9000	4/30	109	39.3	42.4	43.3
CARROT BASIN PILLOW	9000	5/01	SP	33.1	38.9	33.0
CASHE CREEK PILLOW	7800	5/01	SP	11.2	10.0	9.5
CEDAR GROVE	3760	4/25	0	.0	0.0	7.1
CHESSMAN RESERVOIR	6200	4/27	17	3.4	2.3	2.8
CHICKEN CREEK	4060	4/26	0	.0	1.4	3.0
CLOVER MEADOW	8600	4/28	74	21.0	20.8	21.0
CLOVER MEADOW PILLOW	8800	5/01	SP	24.9	13.6	18.2
COLE CREEK	7850	5/02	99	28.4	24.4	24.2
COLE CREEK PILLOW	7850	5/01	SP	28.2	23.1	19.0
COLLEY CREEK	6300	4/28	12	3.3	.0	4.6
COMBINATION	5600	4/25	7	2.3	1.0	3.6
COMBINATION PILLOW	5600	5/01	SP	.7	.7	2.6
COOKE STATION	8150	4/26	51	16.6	18.8	22.2
COPPER BOTTOM	5200	4/29	9	2.0	.0	5.8
COPPER BOTTOM PILLOW	5200	5/01	SP	5.2	2.2	7.1
COPPER CAMP	6950	4/29	52	19.5	21.8	32.4
COPPER CAMP PILLOW	6950	5/01	SP	21.2	25.4	35.9
COPPER CREEK	5700	4/29	16	3.6	5.0	10.9
COPPER LAKE CREEK	6100	4/29	37	12.2	16.8	24.2
COPPER MOUNTAIN	7700	5/04	39	13.6	11.0	11.8
COTTONWOOD CREEK	6400	4/27	40	11.0	9.2	8.3
COYOTE HILL	4200	4/26	0	.0	.0	3.6
CRYSTAL LAKE	6050	4/25	39	15.4	6.2	13.5
CRYSTAL LAKE PILLOW	6050	5/01	SP	15.9	6.0	12.4
DAD CREEK LAKE	8400	4/28	87	19.8	16.2	17.4
DAISY PEAK	7600	4/30	36	8.4	8.4	10.9
DALY CREEK	5780	4/30	32	11.4	10.4	12.8
DALY CREEK PILLOW	5780	5/01	SP	7.3	4.1	8.8
DARKHORSE LAKE	8600	4/28	83	33.4	26.6	30.4
DARKHORSE LAKE PILLOW	8700	5/01	SP	28.6	21.5	30.3
DAVIS CREEK	5400	4/25	33	12.3	24.7	24.0
DEADMAN CREEK	6450	4/26	20	6.6	6.7	9.5
DEADMAN CREEK PILLOW	6450	5/01	SP	6.6	5.6	7.4
DESERT MOUNTAIN	5600	4/24	26	10.2	13.1	14.6
DEVILS SLIDE	8100	4/28	92	28.8	23.4	28.0
DISCOVERY BASIN	7050	4/25	44	13.0	8.8	10.6
DIVIDE	7800	4/28	41	13.4	14.0	11.7
DIVIDE PILLOW	7800	5/01	SP	15.1	14.3	12.2
DIX HILL	6400	4/30	22	8.4	.0	5.4
DUPUYER CREEK PILLOW	5750	5/01	SP	4.7	-	-
EAST BOULDER S	9250	4/28	81	28.0A	29.0	35.0
EAST FORK R.S.	5400	4/26	0	.0	.0	0.7
ELK HORN SPRINGS	7800	4/28	28	9.0	8.4	9.1
ELK PEAK	8000	4/30	55	19.0	15.4	20.8
EMERY CREEK	4350	4/24	18	7.2	10.6	8.4
EMERY CREEK PILLOW	4350	5/01	SP	6.1	12.8	6.9
FATTY CREEK	5500	4/28	52	20.4	21.8	25.2
FISH CREEK	8000	4/26	54	13.9	15.1	12.6
FISHER CREEK	9100	4/26	92	34.4	34.8	44.5
FISHER CREEK PILLOW	9100	5/01	SP	31.4	30.8	40.7
FIVE-BULL	5700	4/29	3	.3	.0	4.5
FLATTOP MOUNTAIN PILLOW	6300	5/01	SP	32.9	42.2	52.8
FLEECER RIDGE	7500	5/03	28	9.0	9.9	9.9
FOOLHEN	8280	4/29	50	16.4	19.2	20.0
FOUR MILE	6900	5/01	44	12.6	9.1	8.1
FOURTH OF JULY	3450	4/25	0	.0	.0	3.2
FRED BURR PASS	8000	5/04	86	31.4	25.2	29.8
FREIGHT CREEK	6000	4/28	30	8.5	9.7	15.0

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LUBRECHT FOREST # 3	5450	5/01	3	1.0	.0	3.9
LUBRECHT FOREST # 4	4650	5/01	0	.0	.0	0.3
LUBRECHT FOREST # 6	4040	5/01	0	.0	.0	0.1
LUBRECHT HYDROPLOT	4200	5/01	0	.0	.0	0.8
MADISON PLATEAU	7750	5/01	58	21.8	27.2	23.6
MADISON PLATEAU PILLOW	7750	5/01	SP	19.0	26.2	24.3
MANY GLACIER	4900	4/28	23	8.0	14.7	9.8
MANY GLACIER PILLOW	4900	5/01	SP	.1	3.4	7.6
MARIAS PASS	5250	4/30	18	7.6	12.0	16.8
MAYNARD CREEK	6210	4/30	46	16.0	13.3	18.0
MAYNARD CREEK PILLOW	6210	4/30	SP	13.2	11.2	14.4
MIDDLE MILL CREEK	7850	4/30	85	26.0	21.0	18.5
MILL CREEK	7500	4/28	34	10.8	6.3	13.1
MINERAL CREEK	4000	5/02	10	3.6	8.4	12.3
MONUMENT PEAK	8850	4/29	76	24.7	25.5	31.2
MONUMENT PEAK PILLOW	8850	5/01	SP	21.0	19.8	29.0
MOULTON RESERVOIR	6850	4/25	20	6.5	5.6	3.2
MOUNT ALLEN #7	5700	4/26	87	32.9	40.1	47.7
MOUNT LOCKHART	6400	4/30	48	15.6	17.2	23.3
MOUNT LOCKHART PILLOW	6400	5/01	SP	15.0	17.0	24.3
MUDD LAKE	7650	4/25	48	16.7	19.8	21.1
MULE CREEK	8300	4/29	50	13.0	15.7	11.5
MULE CREEK PILLOW	8350	5/01	SP	13.8	15.5	17.6
NEVADA CREEK	6480	4/29	38	11.2	8.8	12.0
NEVADA CREEK PILLOW	6480	5/01	SP	8.5	12.3	13.8
NEWTON MOUNTAIN	5600	4/25	62	24.4	41.3	38.9
NEZ PERCE CAMP	5650	4/28	31	12.4	10.0	12.7
NEZ PERCE CAMP PILLOW	5650	5/01	SP	12.7	11.5	10.2
NEZ PERCE CREEK	6500	5/04	14	4.9	4.0	4.5
NEZ PERCE PASS	6570	4/28	44	17.8	12.0	15.9
NOISY BASIN	6040	4/24	126	56.7	53.4	52.4
NOISY BASIN PILLOW	6040	5/01	SP	52.3	50.4	44.8
NORTH FK. ELK CREEK	6250	5/02	31	11.8	7.6	10.5
NORTH FK. ELK CREEK PILLOW	6250	5/01	SP	10.2	6.8	10.0
NORTH FORK JOCKO	6330	4/29	89	39.4	34.8	48.3
NORTH MEADOW	7500	5/01	55	14.7	11.5	10.7
NORTHEAST ENTRANCE	7350	5/02	13	4.1	0.0	7.3
NORTHEAST ENTRANCE PILLOW	7350	5/01	SP	5.5	5.3	5.3
NOTCH	8500	4/28	88	28.0	25.8	19.6
OPHIR PARK	7150	4/30	52	19.6	16.7	18.1
PALISADE CREEK	8250	4/25	82	28.8	31.2	33.1
PETERSON MEADOWS	7200	5/02	46	15.0	9.8	11.7
PETERSON MEADOWS PILLOW	7200	5/02	SP	15.0	10.8	12.2
PICKET PIN D	9450	4/28	75	27.5A	25.0	30.6
PICKFOOT CREEK	6650	4/25	17	5.3	6.5	8.0
PICKFOOT CREEK PILLOW	6650	5/01	SP	6.8	8.6	10.0
PIEGAN PASS #6	5500	4/26	70	26.2	36.9	41.0
PIKE CREEK PILLOW	5930	5/01	SP	17.6	17.8	27.5
PIPESTONE PASS	7200	5/04	20	7.0	6.0	5.8
PLACER BASIN F	8830	4/28	69	21.5A	19.5	24.0
PLACER BASIN PILLOW	8830	5/01	SP	18.7	17.6	20.4
POORMAN CREEK	5100	4/25	52	21.5	30.4	32.5
POORMAN CREEK PILLOW	5100	5/01	SP	19.2	25.6	31.1
PORCUPINE	6500	5/01	28	8.4	3.8	7.9
PORCUPINE PILLOW	6500	5/01	SP	5.4	2.1	2.7
POTOMAGETON PARK	7150	4/27	36	11.6	13.4	11.4
PTARMIGAN	5800	4/25	56	21.9	27.9	40.0
RED MOUNTAIN	6000	4/30	31	10.9	20.5	19.4
RED TOP	5260	4/25	47	18.2	35.3	31.9
ROCK CREEK	5600	4/25	32	11.3	4.6	8.6
ROCK CREEK MEADOWS	8160	4/27	67	21.3	21.5	25.4
ROCKER PEAK	8000	4/27	55	15.4	12.7	17.5

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ROCKER PEAK PILLOW	8000	5/01	SP	14.6	15.7	18.7
ROCKY BOY	4700	4/30	0	.0	1.6	2.3
ROCKY BOY PILLOW	4700	4/30	SP	.0	1.7	2.6
SACAJAWEA	6550	4/30	44	15.8	14.8	14.8
SADDLE MOUNTAIN	7940	4/26	76	28.4	27.0	28.7
SADDLE MOUNTAIN PILLOW	7900	5/01	SP	27.8	24.8	28.3
SENTINEL CREEK	8300	4/27	68	23.6	26.6	27.0
SHOWER FALLS	8100	4/28	93	30.4	24.1	29.5
SHOWER FALLS PILLOW	8100	5/01	SP	32.6	25.7	29.2
SILVER RUN	6630	5/01	42	10.7	3.9	3.3
SILVER RUN PILLOW	6630	5/01	SP	6.9	3.8	0.0
SKALKAHO SUMMIT	7250	4/30	59	22.7	22.8	28.3
SKALKAHO SUMMIT PILLOW	7250	5/01	SP	21.8	22.5	27.2
SKYLARK TRAIL PILLOW	6200	5/01	SP	28.4	27.1	37.1
SLAG-A-MELT LAKE	8750	4/28	89	31.0	33.5	28.7
SLIDE ROCK MOUNTAIN	7100	4/26	50	16.9	12.0	19.4
SMUGGLER MINE	6960	4/30	46	13.8	12.0	10.3
SOUTH FORK SHIELDS	8100	5/01	91	34.6	22.3	29.6
SOUTH FORK SHIELDS PILLOW	8100	5/01	SP	24.7	15.4	22.0
SPOTTED BEAR MOUNTAIN	7000	4/28	24	8.1	7.5	10.8
SPUR PARK	8100	4/26	61	22.2	17.2	24.8
SPUR PARK PILLOW	8100	5/01	SP	23.0	19.0	24.4
STAHL PEAK	6030	4/25	83	33.7	44.9	45.2
STAHL PEAK PILLOW	6030	5/01	SP	30.8	39.6	37.7
STAR LAKE E	9650	4/28	99	37.5A	41.5	50.0
STEMPLE PASS	6600	4/25	30	8.4	7.6	11.6
STORM LAKE	7780	5/02	58	19.2	15.4	16.4
STRYKER BASIN	6180	4/26	69	28.6	36.3	38.2
STUART MILL	6500	4/30	19	6.8	3.3	4.8
STUART MOUNTAIN	7400	4/29	80	33.7	31.3	34.6
SUCKER CREEK	3960	4/30	0	.0	.0	0.5
TAYLOR ROAD	4080	4/30	0	.0	.0	1.1
TEN MILE LOWER	6600	4/30	27	7.4	5.6	6.3
TEN MILE MIDDLE	6800	4/30	47	13.6	11.0	13.5
TEN MILE UPPER	8000	4/30	60	17.6	12.8	16.4
TEPEE CREEK	8000	4/28	54	19.0	21.2	17.8
TEPEE CREEK PILLOW	8000	5/01	SP	16.5	17.1	13.7
TIMBERLINE CREEK	8850	5/01	78	20.3	18.6	19.5
TRAIL CREEK	7090	4/28	38	12.2	4.1	7.9
TRINKUS LAKE	6100	4/28	92	40.4	40.4	45.6
TRUMAN CREEK	4060	4/27	0	.0		0.0
TV MOUNTAIN	6800	4/29	52	20.0	16.6	20.7
TWELVEMILE CREEK	5600	4/24	34	14.6	8.2	16.7
TWELVEMILE CREEK PILLOW	5600	5/01	SP	11.0	4.7	14.5
TWENTY-ONE MILE	7150	5/01	40	12.9	14.7	17.2
TWIN CREEKS	3580	4/28	0	.0	0.0	2.3
TWIN LAKES	6510	4/27	95	38.8	35.0	46.5
TWIN LAKES PILLOW	6400	5/01	SP	33.5	33.6	42.9
UPPER HOLLAND LAKE	6200	4/29	74	30.8	23.8	38.0
WALDRON	5600	4/30	9	2.2	2.2	5.9
WALDRON PILLOW	5600	5/01	SP	3.7	5.4	7.1
WARM SPRINGS	7800	5/04	65	22.2	19.5	22.3
WARM SPRINGS PILLOW	7800	5/01	SP	24.5	21.0	27.0
WEASEL DIVIDE	5450	4/25	53	21.2	35.5	35.8

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WYOMING						
BALD MOUNTAIN (WY)	9380	5/01	109	34.2	24.1	29.4
BALD MOUNTAIN PILLOW (WY)	9380	5/01	SP	25.0	18.3	-
BEARTOOTH LAKE PILLOW (WY)	9270	5/01	SP	19.3	23.9	-
BURGESS R.S. (WY)	7880	5/05	52	15.3	6.1	9.9
BURGESS R.S. PILLOW (WY)	7880	5/01	SP	19.0	12.2	-
CANYON PILLOW (WY)	7940	5/01	SP	9.2	12.0	15.4
EAST ENTRANCE (WY)	6960	4/29	4	.8	4.4	3.0
LAKE CAMP (WY)	7780	4/29	20	5.7	8.7	8.1
LUPINE CREEK (WY)	7380	5/01	22	7.1		8.1
NORRIS BASIN (WY)	7500	4/30	19	5.2	6.7	7.7
NORTH TONGUE (WY)	8450	5/05	68	19.4	-	15.3
OLD FAITHFUL (WY)	7400	5/01	27	9.2	10.8	11.6
PARKERS PEAK PILLOW (WY)	9400	5/01	SP	20.0	21.1	-
SYLVAN LAKE PILLOW (WY)	8420	5/01	SP	21.3	26.5	-
SYLVAN PASS (WY)	7100	4/29	13	4.5	9.8	9.6
TOGWOTEE PASS (WY)	9580	5/01	83	30.4	30.2	33.8
TROUT CREEK PILLOW (WY)	8400	5/01	SP	8.9	9.9	-
TWO OCEAN PLATEAU PILLOW (W	9160	5/01	SP	26.8		-
WOLVERINE (WY)	7650	4/29	22	6.5	10.5	11.6
WOLVERINE PILLOW (WY)	7650	5/01	SP	6.1	9.9	-
YOUNTS PEAK (WY)	8350	4/30	33	11.9A		-
BRITISH COLUMBIA						
BEAVERFOOT (BC)	6200	4/27	14	4.2	7.1	9.3
FERNIE (BC)	3510	4/27	0	0.0	.0	2.4
FERNIE EAST (BC)	4100	4/26	13	3.6	10.6	8.4
FERNIE NF (BC)	3510	4/27	0	0.0A	1.3	4.1
FIDELITY MOUNTAIN (BC)	6130	4/30	100	41.4	37.2	54.2
FIELD (BC)	4200	4/27	0	0.0A	0.0	1.3
FLOE LAKE (BC)	6860	4/27	67	25.4	24.6	33.7
GLACIER (BC)	4100	4/30	49	21.9	19.6	28.0
GRAY CREEK LOWER (BC)	5080	4/30	43	16.0	15.6	19.8
GRAY CREEK UPPER (BC)	6260	4/30	72	28.6	27.5	33.9
KICKING HORSE (BC)	5410	4/27	26	8.5	9.9	12.8
KIMBERLEY LOWER VOR (BC)	4490	4/27	0	0.0	.0	1.4
KIMBERLEY MIDDLE VOR (BC)	5510	4/27	20	6.5	9.4	10.6
KIMBERLEY UPPER VOR (BC)	7020	4/27	44	14.0	17.6	22.1
MARBLE CANYON (BC)	4990	4/29	22	7.8	9.1	12.8
MORRISSEY RIDGE (BC)	6100	4/27	49	19.5	29.2	29.3
MOUNT ABBOT (BC)	6490	4/30	108	47.2	46.5	55.2
MOUNT ASSINIBOINE (BC)	7310	4/27	59	19.4	19.2	24.3
MOUNT JOFFRE (BC)	5740	4/27	30	9.1	13.0	15.5
MOYIE MOUNTAIN (BC)	6360	4/30	34	12.2	16.9	17.2
SINCLAIR PASS (BC)	4490	4/30	0	0.0	1.3	2.5
SULLIVAN MINE (BC)	5080	4/27	16	5.4	9.7	11.7
THUNDER CREEK (BC)	6590	4/27	26	7.1	8.2	12.6
UPPER ELK RIVER (BC)	4400	4/29	0	0.0	.0	1.1
VERMONT CREEK (BC)	4990	4/27	22	5.5	14.6	20.4

SP - Snow Pillow observations; water content only.
A - Aerial observation; water content estimated.
EST - Estimated water content.

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WEST YELLOWSTONE	6700	5/01	23	7.5	6.5	8.3
WEST YELLOWSTONE PILLOW	6700	5/01	SP	6.4	7.0	6.9
WHISKEY CREEK	6800	5/01	44	16.0	20.3	19.3
WHISKEY CREEK PILLOW	6800	5/01	SP	14.0	17.4	15.6
WHITE MILL	8700	4/26	70	24.3	27.0	31.5
WHITE MILL PILLOW	8700	5/01	SP	21.9	23.9	27.1
WHITE PINE RIDGE	8850	4/28	44	11.3	6.8	6.5
WILLOW CREEK	6500	5/02	47	12.6	5.2	5.4
WOOD CREEK	5960	4/29	14	3.3	5.2	9.8
WOOD CREEK PILLOW	5960	5/01	SP	4.9	6.1	12.7
WRONG CREEK	5700	4/24	10	2.8	6.0	11.3
WRONG RIDGE	6800	4/25	35	8.9	13.4	20.9
IDAHO						
ABOVE BURKE (ID)	4100	4/30	25	9.8	13.4	19.9
BEAR MOUNTAIN (ID)	5400	4/25	93	42.6	69.4	64.2
BIG SPRINGS (ID)	6500	5/01	41	17.0	16.8	17.0
GOAT LAKE (ID)	6500	4/27	106	37.7A	-	50.2
HUMBOLDT GULCH (ID)	4250	4/30	11	4.6	11.0	-
HUMBOLDT GULCH PILLOW (ID)	4250	5/01	SP	2.9	5.3	-
ISLAND PARK (ID)	6290	5/01	27	11.4	14.4	11.0
ISLAND PARK PILLOW (ID)	6290	5/01	SP	13.6	15.3	-
LOLO PASS (ID)	5230	5/01	44	18.6	15.8	30.0
LOOKOUT (ID)	5250	4/30	55	23.8	30.6	33.7
MOOSE CREEK (ID)	6200	4/27	52	17.8	14.6	14.6
MOSQUITO RIDGE PILLOW (ID)	5200	5/01	SP	27.9	39.3	-
SAVAGE PASS (ID)	6170	4/30	60	22.6	21.7	28.5
SAWTELL MOUNTAIN (ID)	8720	5/01	106	39.5	51.7	38.5
SMITH CREEK (ID)	4800	4/30	76	33.9	51.0	45.7
SUNSET PILLOW (ID)	5540	4/27	SP	32.9	34.0	-
TARGHEE PASS (ID)	6980	5/01	EST	14.3	14.2	13.2
VALLEY VIEW (ID)	6680	5/01	32	11.3	16.3	13.2
WHITE ELEPHANT (ID)	7710	5/01	66	24.0	32.0	25.7
ALBERTA						
AKAMINA (AL)	5810	5/01	41	14.6	18.8	-
ALLISON PASS (AL)	6490	5/01	36	13.1	15.1	-
BOW RIVER SUMMIT (AL)	6660	5/03	37	12.3	12.6	14.2
CUTHEAD LAKE (AL)	7250	5/03	46	13.1	12.3	16.1
HIGHWOOD SUMMIT BUSH (AL)	7250	5/01	48	14.1	16.2	18.3
LARCH VALLEY (AL)	7740	5/03	44	16.4	16.3	19.0
LITTLE ELBOW SUMMIT (AL)	7090	5/01	43	11.3	15.5	13.5
MIST CREEK (AL)	5740	5/01	5	1.5	7.0	7.8
MOUNT SKOKI (AL)	6740	5/03	43	12.8	13.3	14.3
MUD LAKE (AL)	6200	5/01	29	9.5	13.1	14.5
PTARMIGAN HUT (AL)	7150	5/03	41	13.6	11.6	15.7
SUNSHINE VILLAGE (AL)	7300	5/03	57	20.0	18.0	25.8
THREE ISLE LAKE (AL)	7090	5/01	61	22.5	22.6	-

May showers bring June flowers---and sometimes more snowstorms!

Columbia River Drainage

STREAMFLOW FORECASTS

BASIN STREAM and/or FORECAST POINT	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average
PERIOD	May - September				May - July				May - June			
KOOTENAI RIVER below Libby Dam (1)	5,050	77	5,822	6,590	4,240	76	4,812	5,569				
FISHER RIVER near Libby	84.5	44		194	75.0	42		178				
YAAK RIVER near Troy	208	50		418	180	46		395				
KOOTENAI RIVER at Leonia (1)	5,840	75	7,116	7,838	5,010	74	6,025	6,734	3,965	75	4,325	5,288
INFLOW MOULTON RESERVOIR nr BUTTE (Million Gallons)					200	90	182	223	178	90	148	197
WARM SPRINGS CREEK AT MEYERS DAM near Anaconda (2)	45.0	102		44.2	36.5	103		35.3				
FLINT CREEK near Southern Cross (3)	15.0	93	17.1	16.1	12.5	94	13.4	13.3				
FLINT CREEK below Boulder Creek (4)	64.0	94		68.3	48.4	93		52.0				
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)	10.4	79	9.9	13.2	9.5	77	8.5	12.4				
MIDDLE FORK ROCK CREEK near Philipsburg	63.6	86		74.0	56.5	85		66.3				
NEVADA CREEK near Finn	13.7	72		19.0	12.0	70		17.2				
BLACKFOOT RIVER near Bonner	600	68		881	525	67		786	445	67		664
CLARK FORK RIVER above Milltown (6)	650	92		709	555	92		601	450	92		490
CLARK FORK RIVER above Missoula	1,250	79	1,227	1,590	1,080	78	998	1,387	895	78	745	1,154
WEST FORK BITTERROOT RIVER near Conner (7)	128	80		160	115	79		146				
BITTERROOT RIVER near Darby	400	76		524	355	75		476	305	75		408
SKALKAHO CREEK near Hamilton	46.5	88		53.0	40.0	87		45.8				
BURNT FORK CREEK near Stevensville (8)	30.0	85		35.3	25.0	83		30.2				
BITTERROOT RIVER at Missoula (9)	1,020	75		1,358	915	74		1,238	775	74		1,046
CLARK FORK RIVER below Missoula	2,270	77		2,948	1,995	76		2,625	1,670	76		2,200
CLARK FORK RIVER at St. Regis	3,065	79	3,077	3,880	2,720	79	2,700	3,451	2,290	79	2,064	2,896
NORTH FORK FLATHEAD RIVER near Columbia Falls	1,240	71		1,742	1,100	70		1,562	915	70		1,301
MIDDLE FORK FLATHEAD RIVER near West Glacier	1,220	72	1,383	1,702	1,100	71	1,239	1,546	920	71	960	1,287
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)	1,550	76	1,646	2,029	1,420	75	1,513	1,893	1,220	75	1,215	1,636
FLATHEAD RIVER at Columbia Falls (10)	4,150	74	4,406	5,604	3,750	73	3,970	5,117	3,170	73	3,117	4,317
SWAN RIVER near Big Fork	510	85		599	435	85		514				
FLATHEAD RIVER near Polson (11)	5,030	77	5,485	6,522	4,500	76	4,892	5,956	3,780	76	3,775	5,002
CLARK FORK RIVER near Plains (11)	7,950	73	8,834	10,821	7,130	73	7,701	9,739	5,930	73	5,855	8,127
THOMPSON RIVER near Thompson Falls	141	65		217	120	63		189				
PROSPECT CREEK at Thompson Falls	74.5	66		113	67.0	64		104				
CLARK FORK RIVER at Whitehorse Rapids (12)	8,760	73		11,935	7,830	73		10,711	6,520	73		8,930

(1) Adjusted for storage in Lake Koocanusa.
(2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
(3) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.
(4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.
(5) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.
(6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.
(7) Adjusted for storage in Painted Rocks Reservoir.
(8) Adjusted for diversion into Sunset Highline Canal.
(9) Difference in observed flow Clark Fork above and below Missoula.
(10) Adjusted for storage in Hungry Horse Reservoir.
(11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
(12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Flow Period: Late Season
Tobacco	Fair	Poor
Little Bitterroot	Poor	Poor
Mission Valley	Fair	Fair
Flint Creek	Avg	Fair
Upper Clark Fork	Avg	Avg
Nevada Creek	Fair	Fair
Blackfoot	Fair	Poor
West-side Bitterroot	Fair	Fair
East-side Bitterroot	Fair	Fair
Bitterroot River	Fair	Fair
Lower Clark Fork	Fair	Poor

Snowpack improves in Upper Clark Fork

Snowpack in the Upper Clark Fork improved considerably during April. Some improvement was also recorded in the Blackfoot and Bitterroot River drainages, however, little change was noted in the Flathead and Kootenai drainages.

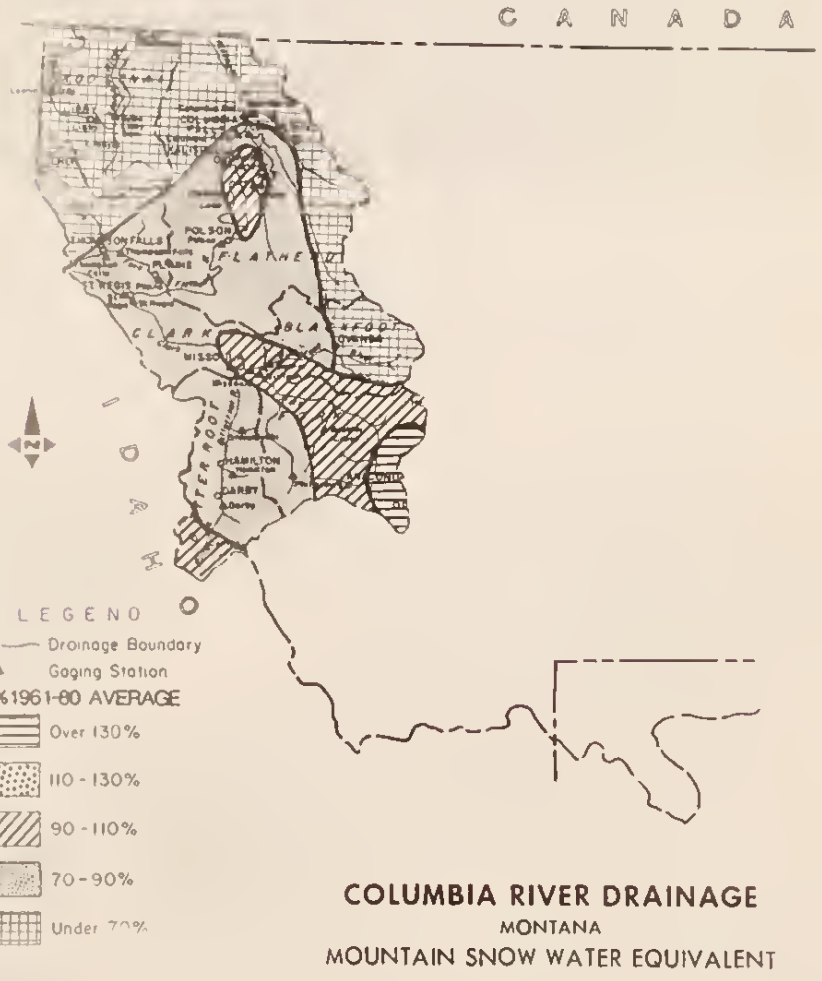
All areas still show below to well below average levels of water stored in the snowpack except for the Upper Clark Fork which has some areas with near or a little above average snowpack.

Low elevations showed some melt during April with some snow courses having no snow. In the Kootenai and Flathead River headwaters, the water content measured at the snow courses is not the lowest of record but is generally the second to fifth lowest of record.

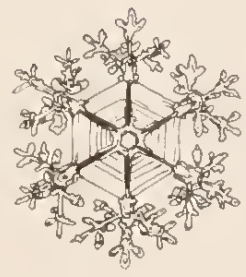
SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF Last Year	THIS YEAR'S SNOW WATER AS PERCENT OF Average
East Kootenay/BC.	25	87	68
Kootenai/Montana	31	58	57
Kootenai above Bonners Ferry	56	67	62
Little Bitterroot	9	53	37
N. Fk. Flathead	10	69	67
M. Fk. Flathead	11	87	65
S. Fk. Flathead	13	101	91
Swan	11	103	90
Flathead	54	91	79
Stillwater & Whitefish	9	68	65
Clark Fork above Blackfoot	39	118	100
Blackfoot	23	110	75
Upper Clark Fork above Missoula	62	116	91
Bitterroot	21	112	88
Lower Clark Fork below Missoula	17	84	68
Clark Fork (Total w/o Flatbead)	100	105	83
Pend O'Reille (Clark Fork & Flatbead)	154	98	81
Columbia (Pend O'Reille & Kootenai)	210	90	76



COLUMBIA RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT



Columbia runoff expected to be low

Runoff is expected to be below to well below average in all drainages except in the Upper Clark Fork drainage where near average runoff is forecast. Spring and summer streamflows are generally predicted to be in the 70 to 80 percent of average range.

Shortages of irrigation water supplies are expected on most streams soon after the main runoff period. Irrigators not having stored water should be prepared for less than normal water supplies through most of the irrigation season.

The Clark Fork River and Flathead River tributaries are expected to reach their peak snowmelt runoff in late May at lower than normal levels. The Blackfoot River could reach its peak a little earlier.

The Bitterroot River is also expected to have a peak flow a little below average near the end of May or in early June. All of these estimates are based on current conditions and snowpack on snow pillows and could vary depending on precipitation and temperatures during May and early June.

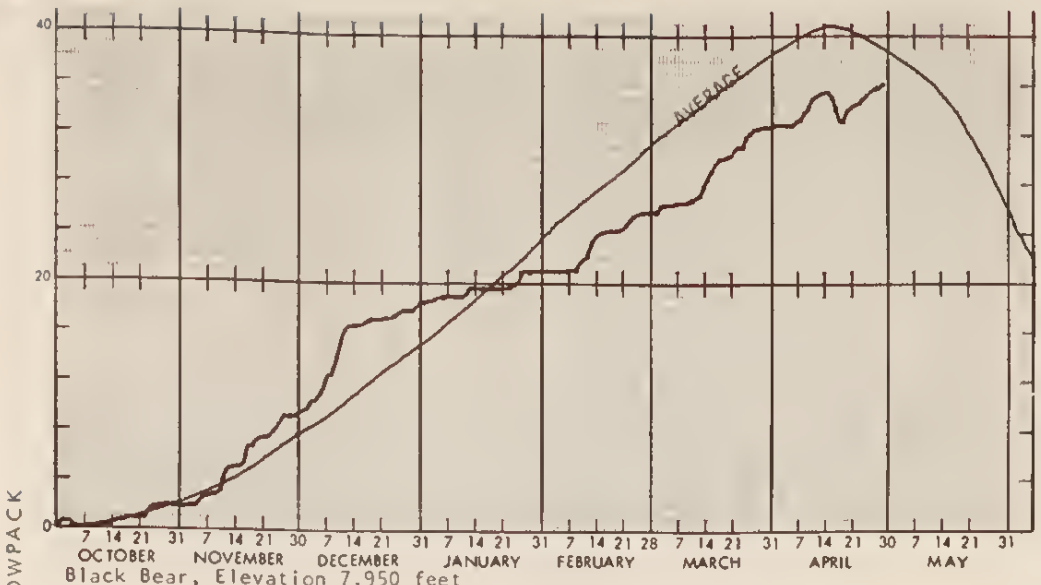
PEAK FLOWS (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET) Forecast Range	PEAK FLOW (SECOND FEET) Average
Blackfoot River near Bonner	5,000 - 7,000	10,332
Clark Fork River above Missoula	10,000 - 14,000	16,804
Bitterroot River near Darby	4,000 - 6,000	6,312
Clark Fork River below Missoula	22,000 - 28,000	32,016
Clark Fork River at St. Regis	26,000 - 34,000	40,305
N. Fk. Flathead near Columbia Falls	13,000 - 15,000	22,086
M. Fk. Flathead near West Glacier	12,000 - 14,000	23,534

*Highly abnormal weather during the critical melting period may cause the peak to be outside the indicated range

Average based on 1961-80 period.

SNOW PILLOW DATA


INCHES OF WATER IN SNOWPACK
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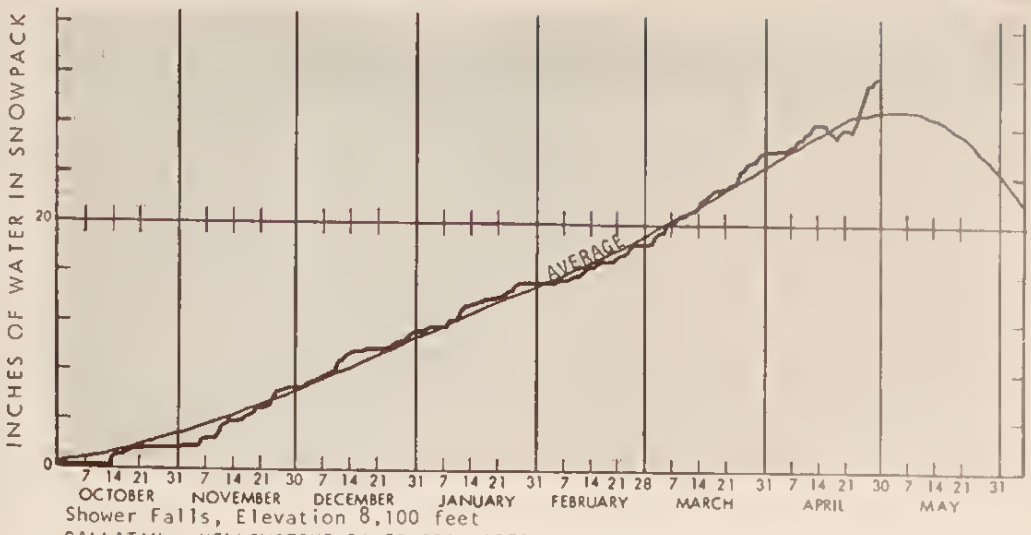
40
AVERAGE
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Black Bear, Elevation 7,950 feet
MADISON RIVER DRAINAGE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AVERAGE
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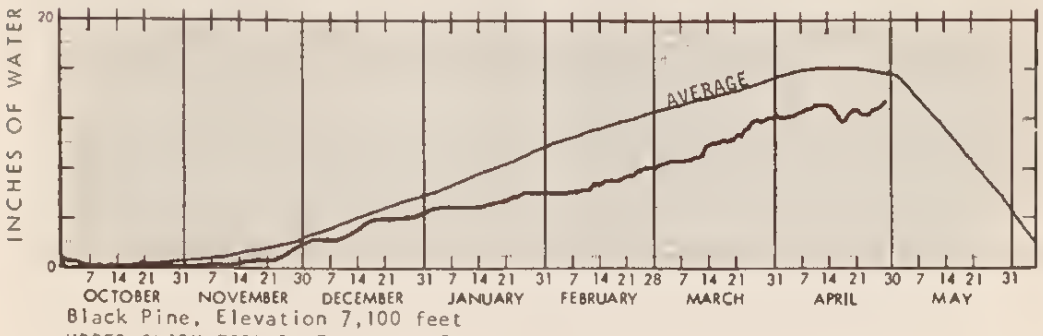
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Shower Falls, Elevation 8,100 feet
GALLATIN - YELLOWSTONE RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
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AVERAGE
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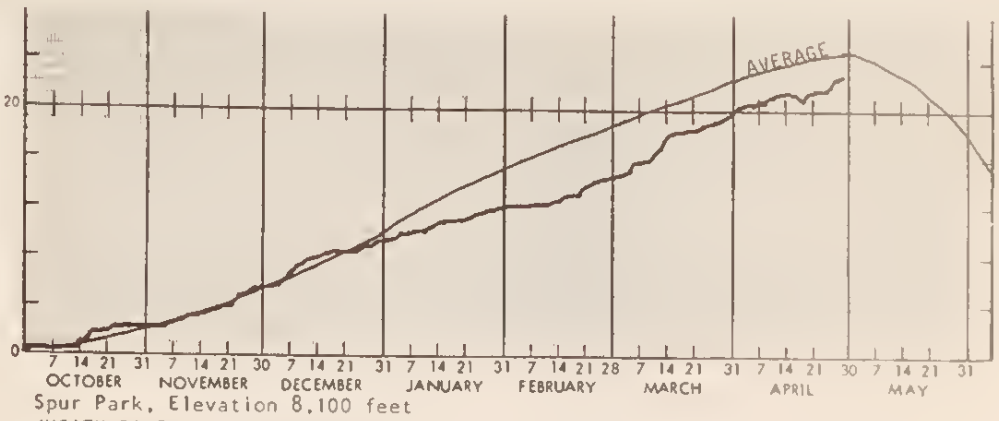
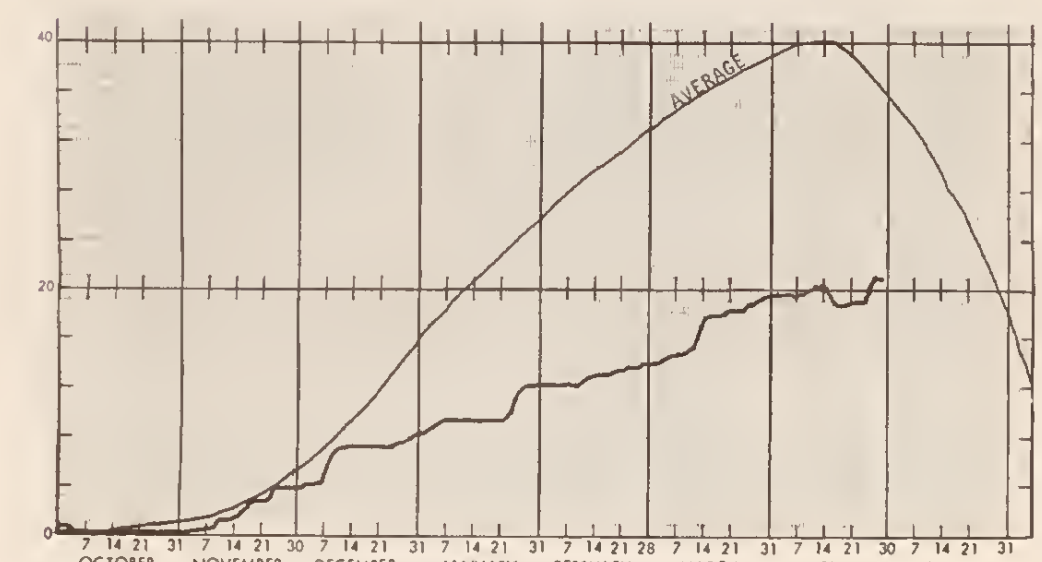
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

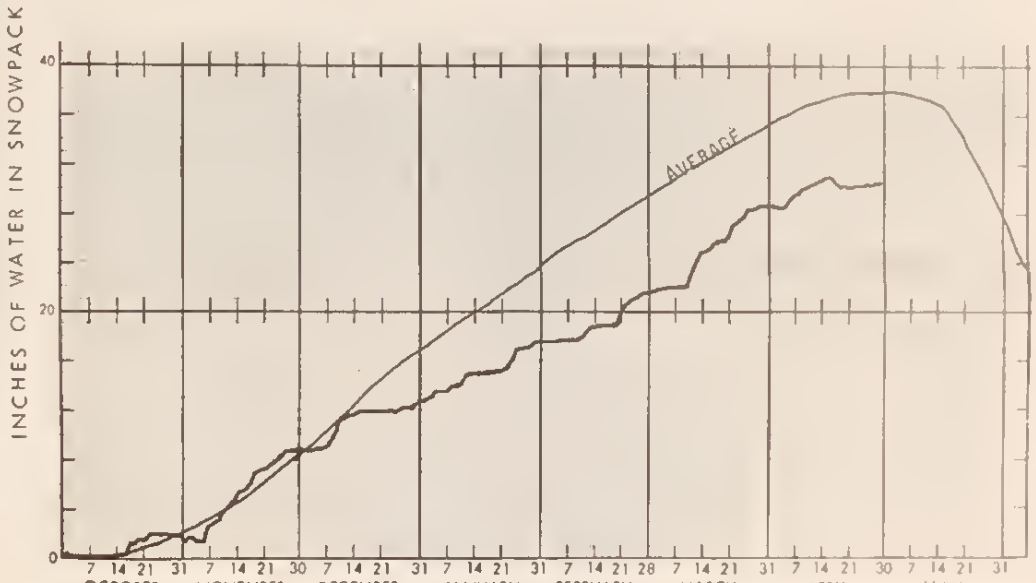
Black Pine, Elevation 7,100 feet
UPPER CLARK FORK RIVER DRAINAGE



Spur Park, Elevation 8,100 feet
JUDITH RIVER DRAINAGE



Copper Camp, Elevation 6,950 feet
BLACKFOOT RIVER DRAINAGE


INCHES OF WATER IN SNOWPACK
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AVERAGE
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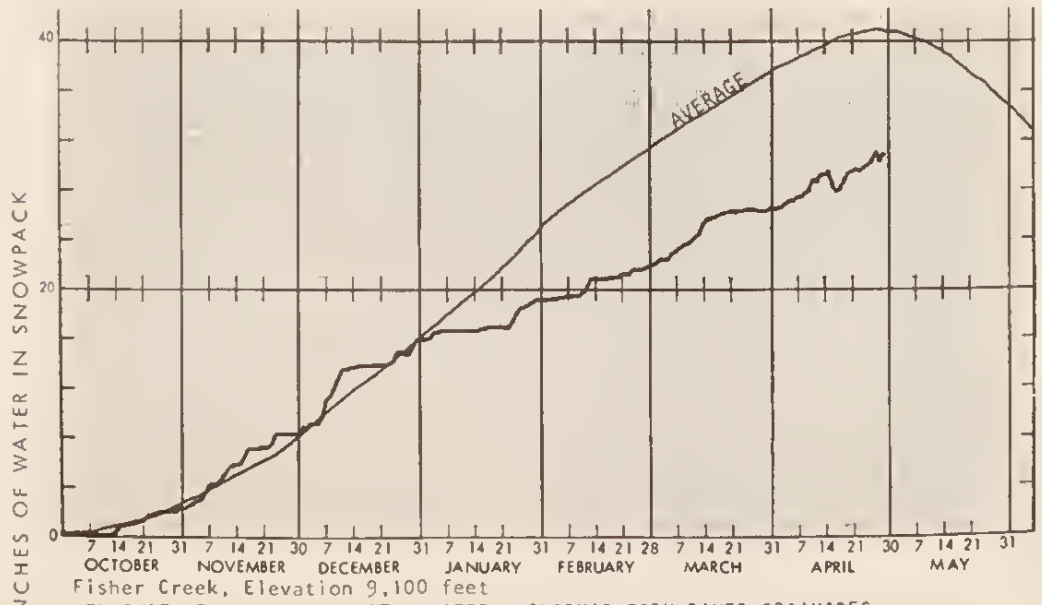
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Stahl Peak, Elevation 6,030 feet
KOOTENAI - FLATHEAD RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
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AVERAGE
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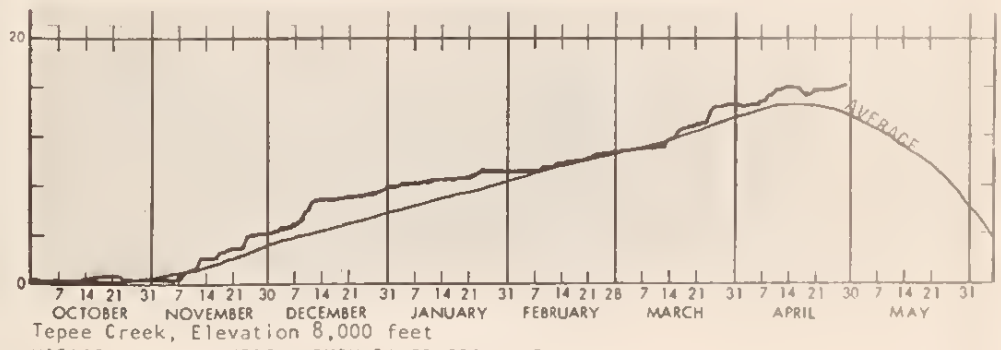
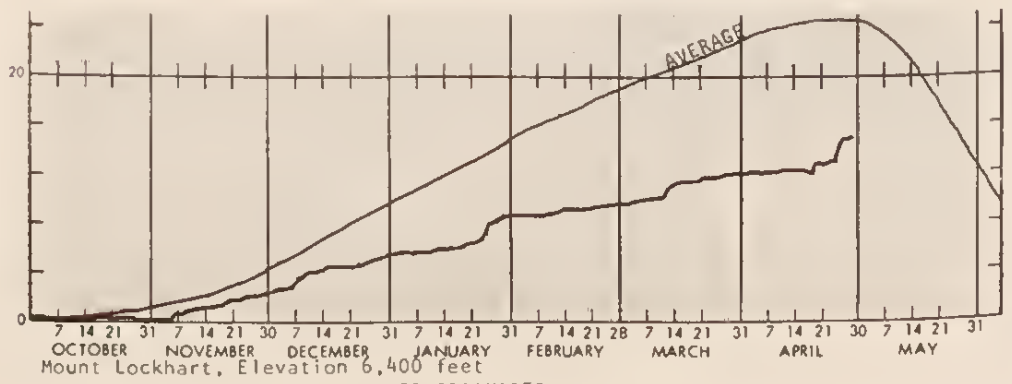
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

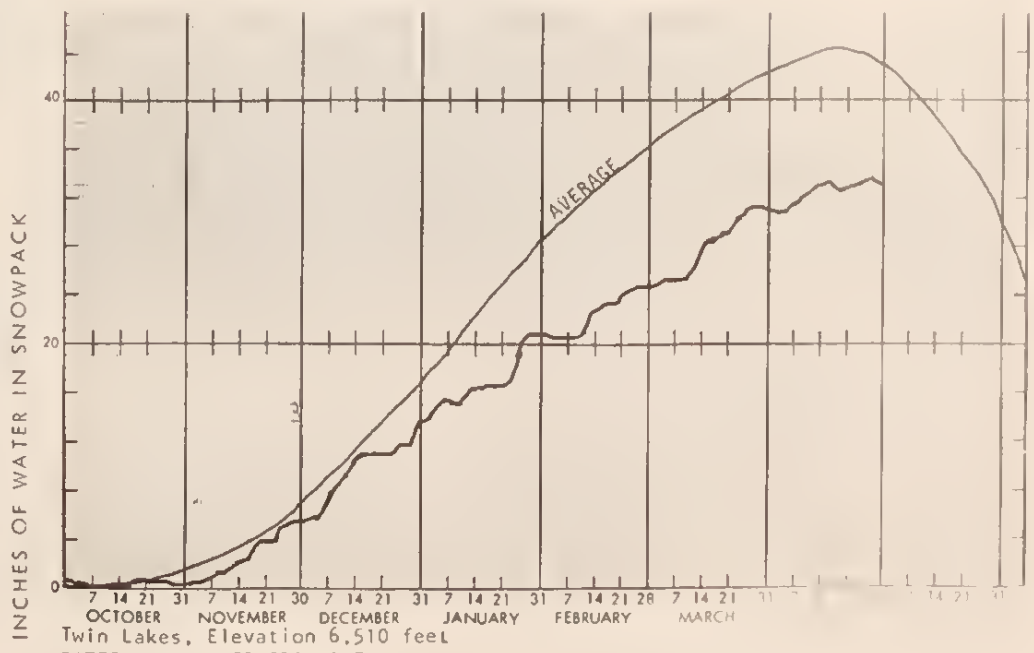
Fisher Creek, Elevation 9,100 feet
YELLOWSTONE - BOULDER - STILLWATER - CLARK'S FORK RIVER DRAINAGES



Tepee Creek, Elevation 8,000 feet
MADISON - BEAVERHEAD - RUBY RIVER DRAINAGES



Mount Lockhart, Elevation 6,400 feet
FLATHEAD - MARIAS - TETON RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
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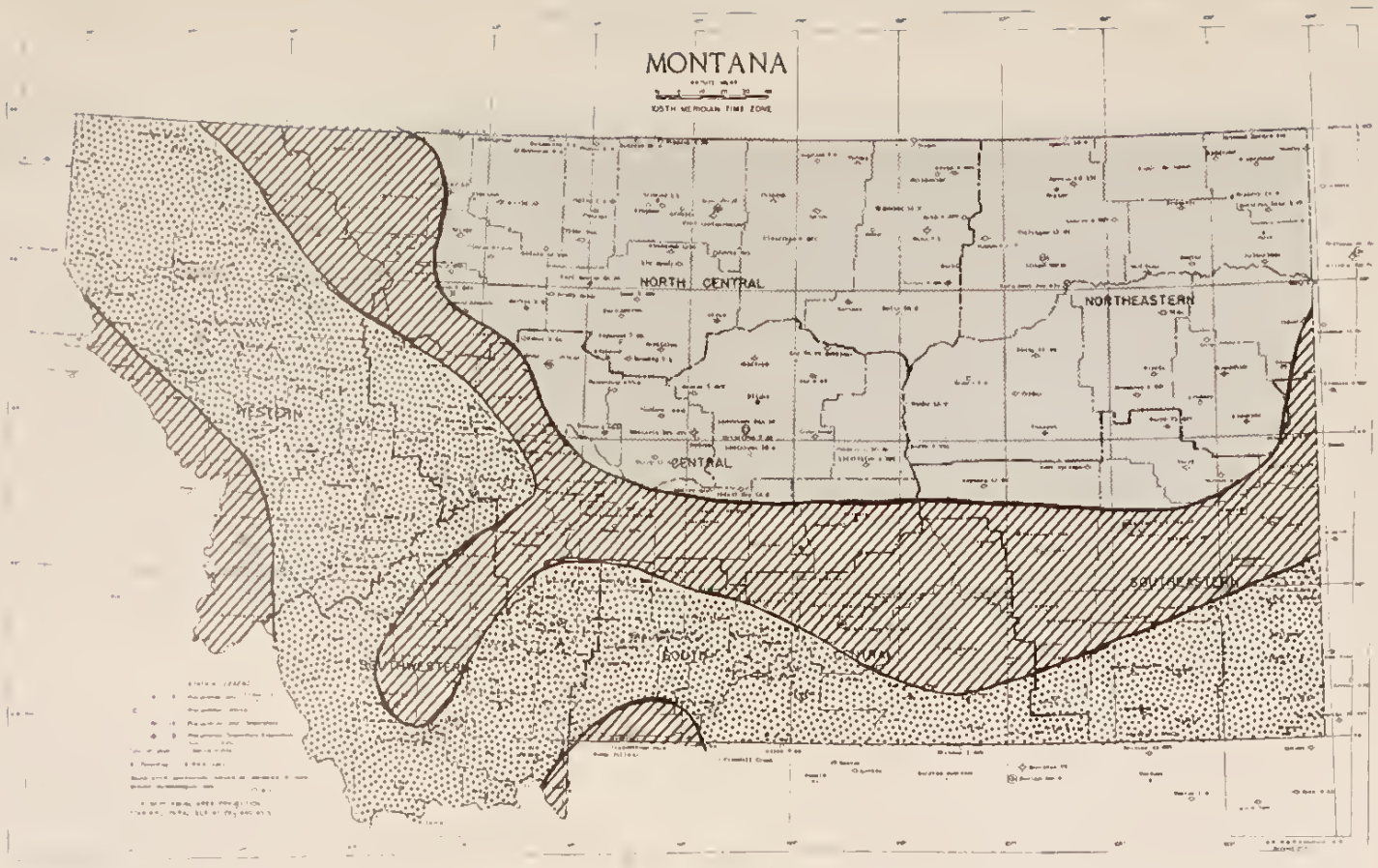
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH

Twin Lakes, Elevation 6,510 feet
BITTERROOT RIVER DRAINAGE



Over 120%

80 - 120%

Under 80%

VALLEY PRECIPITATION

APRIL 1984

Source: NWS
Great Falls, MT

U.S. DEPARTMENT of AGRICULTURE
SOIL CONSERVATION SERVICE
CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES

Canada
- Department of the Environment
  - Atmospheric Environment Service
  - Water Management Service
- British Columbia Ministry of Environment
  - Inventory and Engineering Branch, Hydrology Section
- Alberta Environment
  - Technical Services Division

Federal
- Department of the Army - Corps of Engineers
- Department of Agriculture - Forest Service
- Soil Conservation Service
- Department of Commerce - National Environmental Satellite Service
- National Weather Service
- Department of Interior - Bureau of Indian Affairs
- Fish and Wildlife Service
- Geological Survey
- National Park Service
- Bureau of Reclamation
- Department of Energy - Bonneville Power Administration

STATE AGENCIES
- Montana Conservation Districts
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana State University - Agricultural Experiment Station
- University of Montana - School of Forestry

PRIVATE ORGANIZATIONS
- The Anaconda Company
- Big Sky of Montana
- Butte Water Company
- Flathead Valley Community College
- Montana Power Company
- Pondera County Canal & Reservoir Company

Other organizations and individuals furnish valuable information for snow surveys. Their cooperation is gratefully acknowledged.

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH April 30, 1984

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average
	COLUMBIA				
Kootenai	Koocanusa	5,748.2	2,658.0	2,220.0	1,864.0
Flathead	Hungry Horse	3,451.0	2,221.0	2,507.0	1,982.0
	Flathead Lake	1,791.0	789.2	950.8	932.7
	Camas (4)	45.2	32.4	36.4	27.9
	Mission Valley (8)	100.3	67.4	54.2	49.3
Clark Fork	Georgetown Lake	31.0	27.8	25.2	23.7
	Lower Willow Creek	4.9	5.1	3.3	2.7
	Nevada Creek	12.6	11.1	9.9	10.2
	Noxon Rapids	334.6	314.9	312.8	250.1
Bitterroot	Painted Rocks	31.7	---	---	22.0
	Como	34.9	24.4	---	18.1
	MISSOURI				
Beaverhead	Lima	84.0	71.5	55.2	54.7
	Clark Canyon	257.2	196.7	184.4	157.5
Ruby	Ruby	38.8	40.0	36.3	35.2
Madison	Hebgen Lake	377.5	266.2	222.3	229.7
	Ennis Lake	41.0	15.7	37.1	36.3
Gallatin	Middle Creek	8.0	4.2	4.3	4.4
Missouri	Canyon Ferry	2,043.0	1,584.0	1,568.0	1,499.0
	Hauser & Helena	61.9	63.0	62.5	59.3
	Helena Valley	10.4	8.3	---	7.6
	Lake Helena	10.4	10.9	10.7	9.8
	Holter Lake	81.9	80.5	80.5	70.8
	Fort Peck Lake	18,910.0	16,140.0	15,790.0	15,250.0
Smith	Smith River	10.6	11.6	10.5	9.1
	Newlan Creek	12.4	9.7	9.0	9.1
Musselshell	Bair	7.0	4.4	6.8	6.2
	Martinsdale	23.1	17.5	18.8	12.1
	Deadman's Basin	72.2	69.1	68.3	54.3
Sun	Gibson	99.1	60.6	66.2	50.6
	Willow Creek	32.2	27.8	24.8	23.7
	Pishkun	32.0	29.8	30.3	26.4
Marias	Lower Two Medicine	11.9	---	---	10.0
	Four Horns	19.2	---	---	12.9
	Swift	30.0	18.9	19.2	18.3
	Lake Frances	111.9	47.9	85.6	76.9
Milk	Elwell (Tiber)	1,347.0	699.7	714.9	569.5
	Beaver Creek	3.5	3.2	3.1	2.6
	Fresno	127.2	57.4	57.4	103.3
	Nelson	66.8	43.0	44.8	43.9
	HUDSON BAY				
St. Mary's	Lake Sherburne	64.3	6.9	8.8	21.6
	YELLOWSTONE				
Stillwater	Mystic Lake	21.0	0.0	0.0	2.4
Clark's Fork	Cooney	27.4	19.9	22.4	18.5
Tongue	Tongue River	68.0	24.4	17.3	40.0
Bighorn	Bighorn Lake	1,356.0	849.2	874.0	633.1

50 Soil and Water Conservation

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